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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

JOHN M. VERBIL et al.

Serial No.: 09/874,152

Filed: June 4, 2001

For: AIN Call Queuing

Attorney Docket No.: 1847 (USW0627PUS)

Group Art Unit: 2642

Examiner: Rasha S. Al-Aubaidi

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
U.S. Patent & Trademark Office
P.O. Box 1450
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Sir:

This is an appeal brief from the final rejection of claims 1 and 4-28 of the Office Action dated March 23, 2004. This application was filed on June 4, 2001.

I. REAL PARTY IN INTEREST

The real party in interest is Qwest Communications International Inc, a corporation organized and existing under the laws of the state of Delaware, and having a place of business at 1801 California Street, Suite 3800, Denver, Colorado, 80202, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on June 4, 2001 at Reel 011882/Frame 0821.

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II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to Appellants, the Appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 and 4-28 are pending in this application. Claims 1 and 4-28 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

A response after final rejection was filed on June 1, 2004. This paper did not attempt to amend the claims.

V. SUMMARY OF THE INVENTION

Appellants' invention provides an inexpensive alternative for call queuing by queuing calls at an intelligent peripheral within an Advanced Intelligent Network (AIN) telecommunication system. With reference to Figures 5-7, a method is provided for queuing calls to a subscriber 34 of queuing services accessed through a subscriber line 116. Call Forward on Busy Line is provisioned on the subscriber line to permit detecting a call to the subscriber line at a local switch 30 connected to the subscriber line. If the subscriber line is busy, as in block 132, the call is forwarded to an intelligent peripheral 42 within an Advanced Intelligent Network (AIN) telecommunications system 38, as in block 136. The call is placed in queue 43 in the intelligent peripheral, as in block 140. A determination is made that the subscriber line is not busy, as in block 154. If a call is queued in the intelligent peripheral and the subscriber line is determined to be not busy, the call is connected to the subscriber with the subscriber line, as in block 158.

Appellants' invention places actual calls onto a queue maintained on an intelligent peripheral (IP). These call remains connected while queued. An embodiment of this queuing is described with regard to Figure 6 at page 13, line 20, through page 14, line 3, as follows:

> If subscriber line 116 is busy, the received call is forwarded to IP 42, as in block 136. The Call Forward on Busy Line feature provisioned on subscriber line 116 forwards the received call to a Direct Inward Dial telephone number on AIN IP 42. When IP 42 receives the subscriber call, IP 42 establishes communication with SCP 32 via an SR-3511 interface using TCP/IP. IP 42 requests instructions for handling the call from SCP 32.
>
> A check is made to determine if queue slots 43 are available as in block 138. SCP 32 looks up subscriber information in an associated database and, if queue slots 43 are available, responds to IP 42 with instructions to play an announcement to caller 110 stating that all lines are busy and *to please hold*. IP 42 may also play a message to caller 110 providing caller 110 with the option to leave a message if the system is so provisioned. The received subscriber call is placed in queue 43, as in block 140.

Applicants' invention keeps the original call connected until a subscriber line becomes available, if the calling party so desires.

VI. ISSUES

Claims 1 and 4-28 are pending in this application. The Examiner rejected claims 1, 4-9, 11-19, and 21-28 under 35 U.S.C. § (a) solely on the basis of U.S. Patent No. 5,692,033 to Farris (henceforth, Farris). The Examiner rejected claims 10 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Farris in view of U.S. Patent No. 5,271,058 to Andrews *et al.* Since claims 10 and 20 are grouped with independent claims rejected only over Farris, only one issue is presented for appeal:

1. Whether or not claims 1 and 4-28 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Farris.

VII. GROUPING OF CLAIMS

The following claims are grouped to stand or fall together:

Group A: Claims 1, 4, 5, 10, 21 and 24.

Group B: Claims 6, 11, 20 and 28.

Group C: Claims 7, 15 and 25.

Group D: Claims 8 and 26.

Group E: Claims 9, 19 and 27.

Group F: Claims 12-14, 22 and 23.

Group G: Claim 16.

Group H: Claim 17.

Group I: Claim 18.

VIII. ARGUMENT

In a final Office Action dated March 23, 2004, the Examiner rejected claims 1 and 4-28, all claims pending in this application, under 35 U.S.C. § 103(a) as being unpatentable over Farris. The only issue in this appeal is whether or not Appellants' invention is obvious in view of Farris.

Group A

Group A includes claim 1; claims 4, 5 and 10 which depend from claim 1; independent claim 21; and claim 24 which depends from claim 21.

Claim 1 provides a method of queuing calls to a subscriber of queuing services accessed through a subscriber line. Call Forward on Busy Line is provisioned on the subscriber line to permit detecting a call to the subscriber line at a local switch connected to the subscriber line. If the subscriber line is busy, the call is forwarded to an intelligent peripheral within an Advanced Intelligent Network (AIN) telecommunications system. The call to the subscriber is queued in the intelligent peripheral. A determination is made that the subscriber line is not busy. If a call is queued in the intelligent peripheral and the subscriber line is determined to be not busy, the call is connected to the subscriber with the subscriber line.

Independent claim 21 provides a method for queuing subscriber calls. A subscriber line is provisioned with Call Forward on Busy Line functionality at a local switch servicing the subscriber line. A subscriber call destined for the subscriber line is received at the local switch. If the subscriber line is busy, the received call is forwarded to a Direct Inward Dial telephone number on an intelligent peripheral via the Call Forward on Busy Line functionality. The forwarded call is received at the intelligent peripheral. The forwarded call is queued at the intelligent peripheral if the intelligent peripheral has at lease one available queue slot.

The Examiner asserts that claims 1 and 21 are obvious in view of Farris. However, Farris does not teach or fairly suggest at least two aspects of Appellants' invention. First, Farris does not disclose queuing the actual call waiting for the subscriber line to clear. Instead, Farris ends a call waiting for the subscriber and places the calling phone number in a queue. Second, Farris does not disclose queuing anything in an intelligent peripheral.

1. Farris Does Not Suggest Queuing Actual Calls

Appellants' invention places the actual, live call in a queue. This is clear in claim 1 from the last element of the claim, which provides that, if a call is queued in the intelligent peripheral and the subscriber line is determined to be not busy, the call is connected

with the subscriber line. The only way to connect a call with a given line is if the call is currently in progress.

In contrast, Farris discloses queuing the telephone number of a call when the subscriber line is busy—not the actual call itself. Farris' patent is titled "AIN Queuing for *Call Back Systems.*" Farris defines a call back system in column 2, lines 7-12, reproduced as follows (emphasis added):

> The AIN type network has been used to provide a variety of flexible services for customers. For example, AIN services have been developed to provide a call-back type of service in an AIN network, whereby *a caller who reaches a busy line can receive a call-back when the busy line is disconnected.*

In a call back system, the user is called back once a line becomes available. The user does not stay connected while waiting. Put another way, the call itself is not queued as in Appellants' invention.

Farris teaches using the incoming calls' telephone numbers for call back, not queuing the actual calls themselves. Farris' invention is described in the "Disclosure of the Invention" at column 4, lines 41-67, as follows (emphasis added):

> In accordance with the present invention, all calls to a subscriber number are intercepted and placed in a queue during peak calling times. A call to the subscriber's number triggers a query from a telephone switching office serving the subscriber to an integrated services control point (ISCP). The ISCP instructs the telephone switching office to route the call to an announcement platform that *notifies the calling party of the queuing arrangement. If the calling party desires to be entered into the queue, the calling party enters specific digits in response to prompts from the announcement platform.* The telephone switching office sends a message for the ISCP to add the calling party to the queue, and the ISCP adds to the queue a record comprising the called and calling party numbers, and the time of the call.
>
> At the time that the subscriber disconnects an existing telephone call, the telephone switching office serving the subscriber notifies the ISCP of the completed call. The ISCP then accesses the queue, and notifies the originating telephone

> switching office *to ring both the calling party identified in the queue and the subscriber*. Upon receiving the incoming call, the telephone switching office serving the subscriber sends a message to the ISCP regarding the incoming call. *The ISCP, recognizing the calling party as the number at the top of the queue*, sends a command to the telephone switching office to terminate the call to the subscriber, at which point the queue is advanced for the next caller at the time the subscriber disconnects the call.

Farris discloses ringing the calling party at the top of the queue. If the call itself was queued, this procedure would make no sense.

Farris discloses queuing the telephone number of the calling party, and not the actual call itself. This is disclosed, for example, with regard to Figures 3 and 4, including the following passages from column 11, line 57, through column 12, line 20, reproduced as follows (emphasis added):

> If the caller inputs the digits indicating a desire to be placed in the queue in step 114, the AIN element executing the IVR (either the SSP 10a or the IP 18) collects the information from the caller and sends a message in step 116 to the ISCP 20 to add the calling party to the queue. *The message to the ISCP includes the calling party number, the called party number, and the time of the call.* The ISCP 20 updates the queue in step 118 by accessing the called party CPR and *updating the queue stored in the CPR to include the calling party number* based on the identified time of the call. If the calling party is identified in the subscriber profile as a priority caller, a priority flag is set in the subscriber profile to bypass the queue.
>
> Thus, *the ISCP updates the CPR of the subscriber station Z to maintain a queue having the calling party numbers arranged on the basis of the time of call.* Thus, even though a plurality of callers may be attempting to reach the subscriber station Z at approximately the same time, the ISCP 20 will arrange the queue based upon the actual time of each call as recognized by the CCIS network. As shown in FIG. 1, if the SSP 10a performs the IVR operations, the queue request message is sent via the CCIS links and the STP 16; alternatively, if the IVR functions are performed by the IP 18, the queue

> message is sent to the ISCP 20 via the data communication network 32.
>
> ***At the same time that the queue message is sent to the ISCP 20 from the IVR platform, the AIN element performing the IVR operation disconnects the call***, and sends a disconnect message to the originating SSP via the CCIS network in step 120.

Two things are abundantly clear. First, Farris discloses queuing the calling party's telephone number. Second, Farris disconnects the calling party's call when the telephone number is queued. Thus, Farris neither teaches nor fairly suggests any form of call queuing as that term is used by Applicants. In fact, Farris actively teaches away from queuing the actual call by ending the call and queuing the calling party's number instead.

In response to these arguments, the Examiner provided the following in an Advisory Action dated June 22, 2004:

> Regarding applicant's argument that the user in Farris "does not stay connected while waiting", the examiner would like to clarify that the concept of Farris is to provide a call back feature once the line becomes available (not busy). It does not matter whether the user stays connected or hangs up the phone and receives a callback or ring back later. Actually, few references teach the feature of allowing the user to hang up the phone and have the freedom to do something else until he/she receives the callback from the desired destination.

The Examiner's argument makes no sense. The Examiner admits that Farris teaches a call back system. The Examiner then asserts (without support) that it "does not matter whether the user stays connected or hangs up the phone an receives a callback or ring back later." How can the user get a call back from Farris' system if he is still on the line? Under the Examiner's construction, Farris' system will attempt to call back a user that is holding on line, resulting in a busy signal. This renders Farris' system utterly useless.

The Examiner does not recognize or understand the difference between an actual, live call and the telephone number of a caller, as evidenced by the following from the Advisory Action:

> Regarding applicant's argument that "Farris discloses queuing the telephone number of the calling party, and not the actual call itself". Examiner would like to clarify to the applicant that the telephone number is actually the same as the call itself. Obviously when calls are initiated, they must have certain numbers (digits) that identify them. Therefore, queuing the call in the claimed invention is the same as queuing the telephone number in Farris.

This is clearly false. The telephone number is an address for a telephone (or a telecommunication line) capable of sending or receiving a call. One cannot talk over a telephone number. A call, on the other hand, is a communication path established by a telephone or other piece of telecommunications equipment through a telecommunication network. These are unmistakably different entities.

By his own admission, the Examiner has failed to find any teaching of queuing an actual call in Farris. The Examiner has therefore failed to establish a *prima facie* case of obviousness.

2. Farris Does Not Suggest Using The IP For Queuing

Claim 1 provides for queuing the call to the subscriber in the intelligent peripheral. The Examiner asserts that this is disclosed by Farris within the passage at column 11, line 48, through column 12, line 2, reproduced as follows (emphasis added):

> If the ISCP 20 determines that the incoming call is not an authorized call (i.e., a caller at the top of the queue), the ISCP sends a message in step 112 requesting the SSP 10a to route the incoming call to an interactive voice response (IVR) unit in order to collect caller information. *The IVR application, resident in either the SSP 10a or the IP 18*, initiates a session with the calling party that plays an announcement notifying the caller of the queuing arrangement. The announcement also prompts the caller to input certain digits (e.g., *66) to receive a call-back when the caller's turn in the queue comes up. If the caller is a priority caller that uses a password that is recognized by the CPR (see FIG. 6), the caller will enter that password to bypass the queue.

> *If the caller inputs the digits indicating a desire to be placed in the queue in step 114, the AIN element executing the IVR (either the SSP 10a or the IP 18) collects the information from the caller and sends a message in step 116 to the ISCP 20 to add the calling party to the queue*. The message to the ISCP includes the calling party number, the called party number, and the time of the call. The ISCP 20 updates the queue in step 118 by accessing the called party CPR and updating the queue stored in the CPR to include the calling party number based on the identified time of the call. If the calling party is identified in the subscriber profile as a priority caller, a priority flag is set in the subscriber profile to bypass the queue.

Farris discloses that the Integrated Service Control Point (ISCP), and not the IP, maintains the list of calling party telephone numbers. This list is maintained in a call processing record (CPR) which Farris discloses is part of the ISCP at column 6, lines 22-26, as follows:

> The ISCP 20 offers AIN routing control functionalities to customers of the local exchange carrier. For example, the ISCP includes an SCP database 22 containing customer profile records (CPRs) for controlling call processing in response to respective triggers.

Farris does not disclose using the IP to queue anything, let alone queue calls.

The Examiner apparently realizes Farris does not teach Appellants' use of an IP to queue calls. The Advisory Action contains the following argument by the Examiner:

> Also, since IPs have been used to perform network functionalities in order to decrease the load on the network elements, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the calls queued in the IP in order to free the network resources.

The Examiner offers no basis for this conclusion. The Examiner points to no disclosure in Farris or any other art even hinting at using the IP for queuing calls. The Examiner is clearly using hindsight, provided by Appellants' disclosure, for making his rejection.

Claim 1 is patentable over Farris since Farris neither teaches nor fairly suggests each element in claim 1. Claims 2-10, which depend from claim 1, and claims 22-27, which depend from claim 21, are also therefore patentable.

Group B

Group B includes claim 6, which depends from claim 1, independent claim 11, claim 20, which depends from claim 11, and independent claim 28.

Claim 6 further provides for determining that the subscriber line is not busy by dialing the subscriber line from the intelligent peripheral and determining that the subscriber line is busy if the local switch calls the intelligent peripheral in response to the call to the subscriber line from the intelligent peripheral.

Independent claim 11 provides a system for queuing subscriber calls within an Advanced Intelligent Network (AIN) telecommunications system in which each subscriber call is placed by a caller to a subscriber line. A local switch servicing the subscriber line includes Call Forward on Busy Line functionality provisioned on the subscriber line. The Call Forward on Busy Line functionality forwards any subscriber call received for the subscriber line when the subscriber line is busy. An intelligent peripheral within the AIN system receives any forwarded subscriber call from the local switch. If queue slots are available in the intelligent peripheral, the received subscriber call is queued. A busy check call is placed to the subscriber line. The busy check call is dropped if the busy check call is forwarded back to the intelligent peripheral from the local switch. A queued subscriber call is connected to the busy check call if the subscriber line is not busy.

Independent claim 28 provides a method for queuing subscriber calls. At least one subscriber call is queued in an intelligent peripheral. A busy check call is placed from the intelligent peripheral to a subscriber line. The busy check call is received in a local switch servicing the subscriber line. If the subscriber line is busy, the busy check call is forwarded back to the intelligent peripheral through Call Forward on Busy Line functionality implemented in the local switch. The busy check call is disconnected if the intelligent peripheral receives

back the forwarded busy check call. A queued subscriber call is connected with the busy check call if the subscriber line is not busy.

Like claims 1 and 21, claims 11 and 28 provide for queuing actual calls in an intelligent peripheral. Therefore, as described above in sections A1 and A2, claims 11 and 28 are patentable over Ferris.

Claims 6, 11 and 28 also provide for determining that the subscriber line is busy by placing a call from the IP to the switch supporting the subscriber line. Appellants' invention sends to the IP calls placed to a subscriber line when the subscriber line is busy. Therefore, the IP can check the status of the subscriber line by calling the subscriber line. If the IP's call is sent back to the IP, the IP knows that the subscriber line is busy.

The Examiner rejected claims 11 and 28 "for the same reasons as discussed above with respect to claims 1-2 and 6." The Examiner rejected claim 6 in the final Office Action using the following argument:

> Regarding claim 6, the limitation of having the local switch call the intelligent peripheral when the subscriber line is found to be busy in response to a call to the subscriber line reads on the well known Forward on Busy feature. Calls in the queue will be directed to the called destination by either monitoring for an on-hook status as described by [Farris] (see col. 12, lines 28-38) or by repeatedly dialing the subscriber line from the intelligent peripheral; and determining that the subscriber line is busy.

The Examiner rightly admits that Farris does not disclose Appellants' method for determining if the subscriber line is busy. However, the Examiner believes that the mere existence of the this function teaches or suggests Appellants' invention of using this feature by an intelligent peripheral to determine when a subscriber line is busy. There is no suggestion in Farris, the only art cited by the Examiner, for Appellants' invention of sending a call by the intelligent peripheral to a switch programmed to forward busy calls to the intelligent peripheral. Once again, the Examiner is using hindsight provided by Appellants' specification.

Claims 6, 11 and 28 contain a limitation not found in any claims of Group A. Therefore, even if the claims in Group A are found to be obvious in view of Ferris, the claims

in Group B merit separate consideration. Claims 12-20 depend from claim 11 and are therefore also patentable.

Group C

Group C includes claim 7, which depends from claim 1, claim 15, which depends from claim 11, and claim 25, which depends from claim 21. Each of these claims provides in some manner for determining that the call has been queued for an amount of time, requesting that the caller perform an action to remain in the queue and, if the caller does not perform the requested action, dequeuing the call.

The Examiner asserts that claims 7, 15 and 25 are obvious in view of Farris, citing column 6, lines 64-67, reproduced as follows:

> The local exchange carrier network may also include one or more intelligent peripherals (IPs) 18. The IP 18 provides enhanced announcement and digit collection capabilities and/or speech recognition.

This passage has nothing whatsoever to do with an IP requesting whether or not a caller wishes to remain in the queue. In fact, Farris never teaches or suggests asking a caller whether or not to remain in the queue because, as described above, Farris never queues an actual call.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including asking if the caller wishes to remain in the queue. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claims 7, 15, and 25 include a limitation not found in the claims of Groups A and B. Therefore, even if the claims in Groups A and B are found to be obvious in view of Farris, claims 7, 15 and 25 merit separate consideration.

Group D

Group D includes claim 8, which depends from claim 1, and claim 26, which depends from claim 21. Both claim 8 and claim 26 provide for collecting queue utilization

information about each queued call and generating queue utilization statistics based on the collected information.

The Examiner asserts that claims 8 and 26 are obvious in view of Farris, citing column 4, lines 19-20 and 35-40, reproduced as follows:

> There is a need for an arrangement that provides a queuing service that organizes callers based on the sequence in which the callers dial the destination station.
> * * *
> These and other needs are met by the present invention, whereby an intelligent network manages all calls to a destination number during peak calling times by placing incoming calls in a queue and initiating call-backs based on the order that the incoming calls were originally placed in the queue.

These passages have nothing whatsoever to do with collecting information and generating statistics based on this information. In fact, Farris does not appear to disclose generating statistics of any kind.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including collecting queue utilization information about each queued call and generating queue utilization statistics based on the collected information. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claims 8 and 26 include a limitation not found in the claims of Groups A-C. Therefore, even if the claims in Groups A-C are found to be obvious in view of Farris, claims 8 and 26 merit separate consideration.

Group E

Group E includes claim 9, which depends from claim 1, claim 19, which depends from claim 11, and claim 27, which depends from claim 21. Claims 9, 19 and 27 provide that the intelligent peripheral can place a status call providing status information to the subscriber about queued calls.

The Examiner asserts that claims 9, 19 and 27 are obvious in view of Farris, citing column 6, lines 65-67, reproduced as follows:

> The local exchange carrier network may also include one or more intelligent peripherals (IPs) 18. The IP 18 provides enhanced announcement and digit collection capabilities and/or speech recognition.

This passage does not teach or suggest an intelligent peripheral placing a call providing status information about queued calls. The mere fact that an intelligent peripheral can provide "enhanced announcement" does not make obvious Appellants' particular use of the intelligent peripheral.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including placing a call from an intelligent peripheral to provide queued call status. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claims 9, 19 and 27 include a limitation not found in the claims of Groups A-D. Therefore, even if the claims in Groups A-D are found to be obvious in view of Farris, claims 9, 19 and 27 merit separate consideration.

Group F

Group F includes claims 12-14, which depend from claim 11, and claims 22 and 23, which depend from claim 21. Claim 12 further provides a service control point, in communication with the intelligent peripheral, that determines if queue slots are available in the intelligent peripheral. Claim 13, which depends from claim 12, provides that the service control point instructs the intelligent peripheral to dial the number of the messaging system and to bridge the received subscriber call to the messaging system call if the service control point determines no queue slots are available. Claim 14, which depends from claim 12, provides that the service control point instructs the intelligent peripheral to play a message to the received subscriber call if the service control point determines no queue slots are available. Claim 22 further provides for calling a messaging service from the intelligent peripheral if the intelligent peripheral has no available queue slots and bridging the forwarded call with the

messaging service call. Claim 23 further provides for playing a message from the intelligent peripheral if the intelligent peripheral has no available queue slots.

The Examiner justified rejecting claim 12 in the final Office Action using the following argument:

> Regarding claim 12, the service control point 22 determining if queue slots are available in the intelligent peripheral (see col. 9, lines 27-30, also this is obvious in order to place this call in queue, there must be a free slot or space provided).

The passage cited by the Examiner is included in column 9, lines 27-37, reproduced as follows:

> All such triggers cause a program controlled switch to initiate a query to a remote database, in an ISCP, SCP or the like. The database responds with information for controlling further processing of the call by the switch and/or other network elements (e.g. IPs).
>
> According to the present invention, such triggers are used to enable the ISCP to mediate a plurality of calls to a subscriber station by providing a queuing service that records the order of incoming calls in a queue list and performs a call-back from the queue list when the subscriber station is no longer busy.

This passage discloses a service control point which queues incoming telephone numbers within the service control point. This passage discloses nothing about queue slots in an intelligent peripheral or about determining if queue slots are available anywhere. In fact, Farris does not seem to address the problem of finite queue length. Thus, Farris neither teaches nor suggests claim 12 (or claims 13, 14, 22 and 23).

The Examiner rejected claims 13, 14, 22 and 23 as being disclosed by column 10, lines 28-45, reproduced as follows:

> The ISCP utilizes the dialed digits to access an appropriate call processing record. The record may be within its own internal SCP type database, or the ISCP may access a record in a separate database. The record indicates different procedures to be used at different times, for example different priority bypass levels set within the queue interval. If the call

> occurs between times t_1 and t_2, the ISCP transmits a TCAP response message through SS7 data links and one or more STPs to the SSP to route the call to an IVR platform, resident in either the SSP serving the subscriber as IVR platform 18' in FIG. 1, another SSP or an auxiliary platform such as the IP. For purposes of further discussion, it will be assumed that the SSP routes the call to the IP 18.
>
> The IP 18 processes the call as a call to the particular subscriber's mailbox, e.g. by playing the subscriber's personalized greeting and recording digits input by the caller indicating whether the caller wants to be added to a queue.

Farris discloses playing the same message that would be played if the call was routed to the subscriber's mailbox. This appears to have nothing to do with playing a message indicating that no queue slots are available in the intelligent peripheral.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including determining no queue slots are available to queue a call in the intelligent peripheral and/or delivering a message that no queue slots are available. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claims 12-14, 22 and 23 include a limitation not found in the claims of Groups A-E. Therefore, even if the claims in Groups A-E are found to be obvious in view of Farris, claims 12-14, 22 and 23 merit separate consideration.

Group G

Group G includes claim 16, which depends from claim 11. Claim 16 further includes a plurality of intelligent peripherals, at least one service control point and a data server. Each intelligent peripheral implements at least one call queue associated with one of a plurality of subscribers. Each intelligent peripheral communicates with a service control point collecting information about each queued call. The data server aggregates queue utilization data for each subscriber.

In rejecting claim 16, the Examiner first states that Farris discloses Appellants' service control point (SCP) collecting information from intelligent peripherals by citing a passage contained in column 8, lines 31-40, reproduced as follows:

> The SCP 22 will contain a call processing record (CPR) for providing the subscriber a customized service on the particular type of call. The subscriber has previously communicated how certain calls should be processed, and the network's personnel will have established the appropriate CPR in the SCP 22.
>
> The SCP 22 accesses the CPR to determine how to process the particular call and returns an appropriate instruction, in a TCAP response message, to the ISCP 20.

This passage discloses that the SCP keeps records describing how to process a call, not information about each queued call.

The Examiner next states that Farris discloses Appellants' data server, which aggregates queue utilization data for each subscriber, citing Farris' column 6, lines 23-33, reproduced as follows:

> The ISCP 20 offers AIN routing control functionalities to customers of the local exchange carrier. For example, the ISCP includes an SCP database 22 containing customer profile records (CPRs) for controlling call processing in response to respective triggers. The ISCP 20 may also access a separate database, for example, to supplement its routing tables for certain services. In the preferred system, a second function of the ISCP is to serve as a mediation point. Specifically, the ISCP 20 mediates queries and responses between the local exchange carrier network components and databases operated by other carriers.

This passage has nothing whatsoever to do with a data server which aggregates queue utilization data. In fact, Farris does not appear to discuss aggregating queue utilization data anywhere.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including a data server which aggregates queue utilization data. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 16 includes a limitation not found in the claims of Groups A-F. Therefore, even if the claims in Groups A-F are found to be obvious in view of Farris, claim 16 merits separate consideration.

Group H

Group H includes claim 17, which depends from claim 16. Claim 17 further provides at least one data distributor in communication with a service control point and the data server. Each data distributor receives information about each queued call from the service control point and periodically forwards the information to the data server.

The Examiner rejected claim 17 as obvious in view of Farris, stating that "the data distributor will read on ISCP 20, see col. 9, lines 32-46." This passage is reproduced as follows:

> According to the present invention, such triggers are used to enable the ISCP to mediate a plurality of calls to a subscriber station by providing a queuing service that records the order of incoming calls in a queue list and performs a call-back from the queue list when the subscriber station is no longer busy. The present invention maintains a call processing record for the subscriber of the queuing service. The call processing record includes a subscriber profile identifying the operational parameters of the queuing service, including start time and stop time. At the start of the queuing interval, the ISCP outputs a message to the end office switch 10a serving a subscriber Z to the service. Upon receiving the message from the ISCP, the end office switch 10a updates its switch translation tables to set a termination attempt trigger and a disconnect (on-hook) trigger on the local communication line serving the subscriber Z.

This passage does not discuss receiving information about each queued call. This passage discusses records describing the subscriber, the person receiving queued calls. More importantly, there is no indication that whatever information is maintained is sent to a data server, which the Examiner also appears to have identified as the ISCP.

The Examiner has failed to find any teaching or suggestion in Farris, the only art cited, for Appellants' invention including a data distributor receiving information about each queued call from the service control point and periodically forwarding the information to a data server. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 17 includes a limitation not found in the claims of Groups A-G. Therefore, even if the claims in Groups A-G are found to be obvious in view of Farris, claim 17 merits separate consideration.

Group I

Group I includes claim 18, which depends from claim 17. Claim 18 additionally provides for a data publishing platform, in communication with the data server, which aggregates subscriber queue utilization data across a plurality of report periods.

The Examiner rejected claim 18 together with claim 17. This rejection never even mentions a data publishing platform or where in Farris such a platform might be found. Farris neither teaches or suggests anything remotely similar to Appellants' data publishing platform.

Claim 18 includes limitations not found in the claims of Groups A-H. Therefore, even if the claims in Groups A-H are found to be obvious in view of Farris, claim 18 merits separate consideration.

The fee of $330 as applicable under the provisions of 37 C.F.R. § 1.17(c) is enclosed. Please charge any additional fee or credit any overpayment in connection with this filing to our Deposit Account No. 02-3978. A duplicate of this notice is enclosed for this purpose.

Respectfully submitted,

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Enclosure - Appendix

IX. APPENDIX - CLAIMS ON APPEAL

Claims 1 and 4-28, currently pending in this application, are reproduced as follows:

1. A method of queuing calls to a subscriber of queuing services accessed through a subscriber line, the method comprising:

provisioning Call Forward on Busy Line on the subscriber line to permit detecting a call to the subscriber line at a local switch connected to the subscriber line;

if the subscriber line is busy, forwarding the call to an intelligent peripheral within an Advanced Intelligent Network (AIN) telecommunications system;

queuing the call to the subscriber in the intelligent peripheral;

determining that the subscriber line is not busy; and

if a call is queued in the intelligent peripheral and the subscriber line is determined to be not busy, connecting the call to the subscriber with the subscriber line.

2. (canceled) .

3. (canceled) .

4. A method of queuing calls as in claim 1 wherein queuing the call to the subscriber comprises forwarding the subscriber line call to a Direct Inward Dial telephone number on the intelligent peripheral.

5. A method of queuing calls as in claim 1 wherein determining that the subscriber line is not busy comprises setting a Next Event List at the subscriber local switch.

6. A method of queuing calls as in claim 1 wherein determining that the subscriber line is not busy comprises:

dialing the subscriber line from the intelligent peripheral; and

determining that the subscriber line is busy if the local switch calls the intelligent peripheral in response to the call to the subscriber line from the intelligent peripheral.

7. A method of queuing calls as in claim 1 further comprising

determining that the call to the subscriber has been queued for a determined amount of time;

requesting that a caller placing the call to the subscriber perform an action to remain in queue; and

if the caller does not perform the requested action, dequeuing the call.

8. A method of queuing calls as in claim 1 further comprising:

receiving a plurality of calls to access the subscriber line;

placing each received call in the queue associated with the subscriber line if the subscriber line is busy;

collecting queue utilization information about each queued call; and

generating queue utilization statistics based on the collected queue utilization information.

9. A method of queuing calls as in claim 1 further comprising placing a call from the intelligent peripheral indicating status of the queued subscriber line call to the subscriber.

10. A method of queuing calls as in claim 1 wherein the intelligent peripheral is a switchless intelligent peripheral.

11. A system for queuing subscriber calls within an Advanced Intelligent Network (AIN) telecommunications system, each subscriber call placed by a caller to a subscriber line, the system comprising:

a local switch servicing the subscriber line, the local switch including Call Forward on Busy Line functionality provisioned on the subscriber line, the Call

Forward on Busy Line functionality forwarding any subscriber call received for the subscriber line when the subscriber line is busy; and

an intelligent peripheral within the AIN system operative to:

(a) receive any forwarded subscriber call from the local switch;

(b) if queue slots are available in the intelligent peripheral, queue the received subscriber call;

(c) place a busy check call to the subscriber line;

(d) drop the busy check call if the busy check call is forwarded back to the intelligent peripheral from the local switch; and

(e) connect a queued subscriber call to the busy check call if the subscriber line is not busy.

12. A system for queuing subscriber calls as in claim 11 further comprising a service control point in communication with the intelligent peripheral, the service control point determining if queue slots are available in the intelligent peripheral.

13. A system for queuing subscriber calls as in claim 12 further comprising a messaging system, the service control point instructing the intelligent peripheral to dial the number of the messaging system and to bridge the received

subscriber call to the messaging system call if the service control point determines no queue slots are available.

14. A system for queuing subscriber calls as in claim 12 wherein the service control point instructs the intelligent peripheral to play a message to the received subscriber call if the service control point determines no queue slots are available.

15. A system for queuing subscriber calls as in claim 11 wherein the intelligent peripheral is further operative to request that the caller perform an action to remain in queue after determining that the subscriber call has been queued for a determined amount of time and, if the caller does not perform the requested action, to dequeue the call.

16. A system for queuing subscriber calls as in claim 11 further comprising:

a plurality of intelligent peripherals, each intelligent peripheral implementing at least one call queue, each call queue associated with one of a plurality of subscribers;

at least one service control point, each intelligent peripheral in communication with one service control point collecting information about each queued call; and

a data server in communication with the at least one service control point, the data server aggregating queue utilization data for each subscriber.

17. A system for queuing subscriber calls as in claim 16 further comprising at least one data distributor, each data distributor in communication with a service control point and the data server, each data distributor receiving information about each queued call from the service control point and periodically forwarding the information to the data server.

18. A system for queuing subscriber calls as in claim 16 further comprising a data publishing platform in communication with the data server, the data publishing platform aggregating subscriber queue utilization data across a plurality of report periods.

19. A system for queuing subscriber calls as in claim 11 wherein the intelligent peripheral is further operative to place a status call providing status information to the subscriber about at least one queued call.

20. A system for queuing subscriber calls as in claim 11 wherein the intelligent peripheral is a switchless intelligent peripheral.

21. A method for queuing subscriber calls comprising:

provisioning a subscriber line with Call Forward on Busy Line functionality at a local switch servicing the subscriber line;

receiving a subscriber call destined for the subscriber line at the local switch;

if the subscriber line is busy, forwarding the received call to a Direct Inward Dial telephone number on an intelligent peripheral via the Call Forward on Busy Line functionality;

receiving the forwarded call at the intelligent peripheral; and

queuing the forwarded call at the intelligent peripheral if the intelligent peripheral has at lease one available queue slot.

22. A method for queuing subscriber calls as in claim 21 further comprising calling a messaging service from the intelligent peripheral if the intelligent peripheral has no available queue slots and bridging the forwarded call with the messaging service call.

23. A method for queuing subscriber calls as in claim 21 further comprising playing a message from the intelligent peripheral if the intelligent peripheral has no available queue slots.

24. A method for queuing subscriber calls as in claim 21 further comprising playing a message from the intelligent peripheral to the forwarded call when queuing the forwarded call.

25. A method for queuing subscriber calls as in claim 21 further comprising:

determining that the subscriber call has been queued for a determined amount of time;

requesting that a caller placing the subscriber call perform an action to remain in queue; and

if the caller does not perform the requested action, dequeuing the call.

26. A method for queuing subscriber calls as in claim 21 further comprising:

receiving a plurality of subscriber calls to access the subscriber line;

placing each received call in the queue associated with the subscriber line if the subscriber line is busy;

collecting queue utilization information about each queued call; and

generating queue utilization statistics based on the collected queue utilization information.

27. A method for queuing subscriber calls as in claim 21 further comprising placing a call from the intelligent peripheral indicating status of the queued subscriber call.

28. A method for queuing subscriber calls comprising:

queuing at least one subscriber call in an intelligent peripheral;

placing a busy check call from the intelligent peripheral to a subscriber line;

receiving the busy check call in a local switch servicing the subscriber line;

if the subscriber line is busy, forwarding the busy check call back to the intelligent peripheral through Call Forward on Busy Line functionality implemented in the local switch;

disconnecting the busy check call if the intelligent peripheral receives back the forwarded busy check call; and

connecting a queued subscriber call with the busy check call if the subscriber line is not busy.